



*Aravaipa Creek, near the Aravaipa Canyon Wilderness Area, in southeastern Arizona*

## The San Pedro-Willcox Playa-Rio Yaqui Watershed

The San Pedro River begins in the mountains near Cananea Sonora, Mexico, and flows north about 100 miles through the southeast corner of Arizona to join the Gila River near Winkelman, Arizona. This watershed also includes two other hydrologically distinct areas: 1) Willcox Playa, a terminal basin (does not drain out of the area), and 2) Two relatively short drainages, Whitewater Draw and Black Draw, that flow to the Rio Yaqui in Mexico.

This 7,015 square-mile watershed is lightly populated with only 130,000 people (2000 census). Communities in the area include the rapidly growing Sierra Vista area and several historic towns, such as Tombstone, Douglas, and Bisbee. Grazing is widespread, and a significant area of irrigated agriculture is located on the eastern side of the watershed. Historic copper, silver, and gold mining took place across the watershed; however, few mines are still active.

Land ownership is divided approximately as: 40% private land, 40% state land, 20% federal land, and no Tribal lands. The Bureau of Land Management established the 50,000 acre San Pedro Riparian National Conservation Area in 1988 to protect this critical habitat.

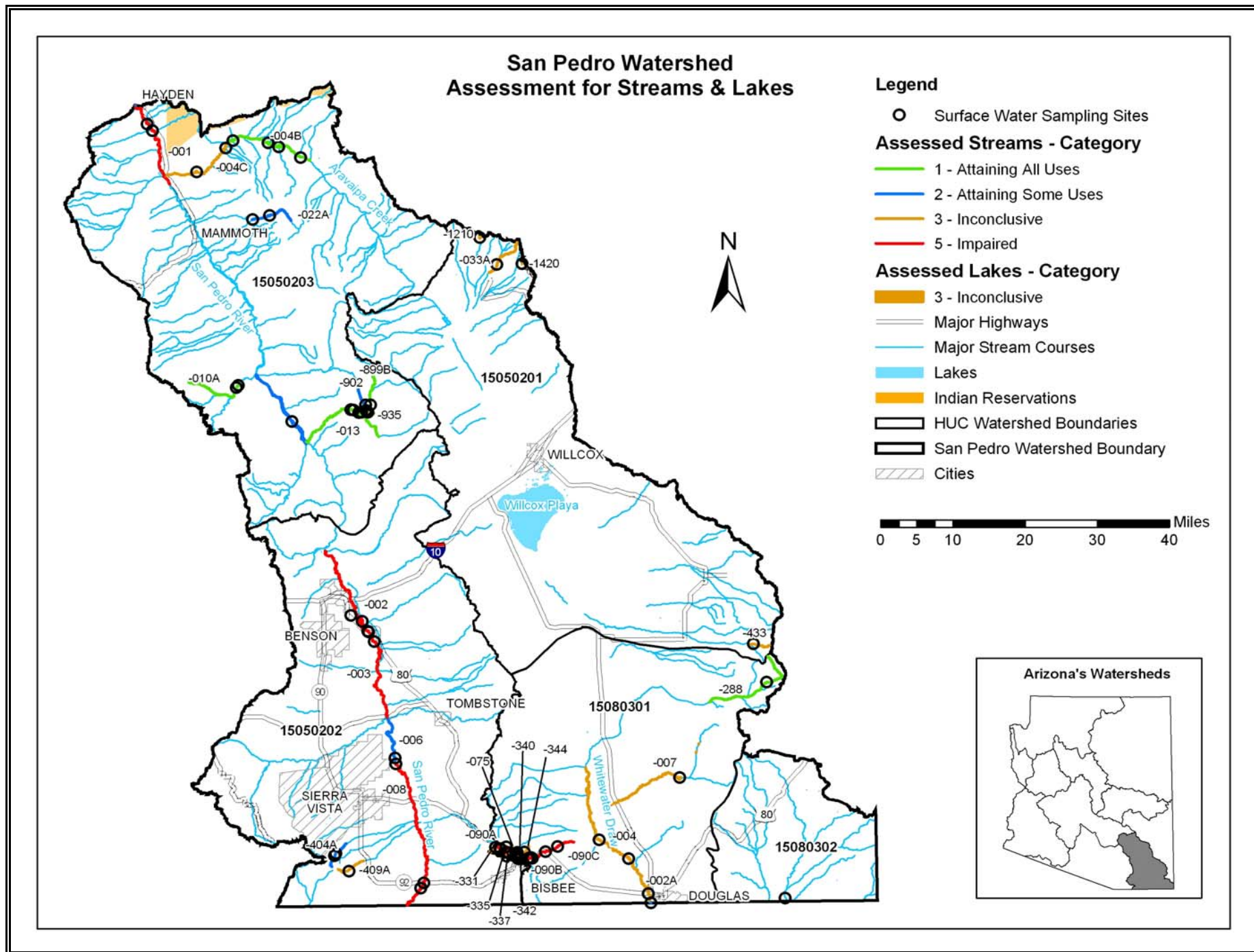
Elevation varies from 4,000 feet (above sea level), with desert grassland and warmwater aquatic communities, to 10,700 feet at Mount Graham with alpine forest. Areas above 5,000 feet typically support coldwater aquatic communities where perennial waters exist.

**The assessment** – Assessments were completed for 37 stream reaches and three lakes. Of the 331 stream miles assessed, 70 miles (five reaches) were attaining all uses and 84 miles (eight reaches) were impaired. All others were assessed as inconclusive or attaining some uses. Of the 12 lake acres assessed (three lakes), all were assessed as inconclusive.

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The San Pedro **monitoring table (Table 17)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 18)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

Detailed information on how to use these tables is found at the beginning of this chapter (p. IV-1). Assessment methods and criteria can be found in Chapter III.





**Figure 21. Watershed monitoring and assessments**

**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
STREAM MONITORING DATA								
Aravaipa Creek Stowe Gulch - Wilderness Area AZ15050203-004B A&Ww, FC, FBC, AgL Unique Water	ADEQ Ambient Monitoring Near springs SPARA012.45 100209	1998 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring At east trail head SPARA011.03 100210	1998 - 1 partial suite 2000 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Below Parson's Canyon SPARA010.40 100211	1998 - 1 partial suite 1999 - 1 partial suite 2000 - 1 full + 2 partial suites	No exceedances					
	ADEQ Ambient Monitoring At Hell's Half Acre (West end) SPARA007.92 100716	1999 - 1 full suite 2000 - 4 full suites 2001 - 2 full suites 2002 - 1 full suite	No exceedances					
	Summary Row A&Ww    Attaining FC        Attaining FBC       Attaining AgL       Attaining	1998 - 2002  16 samples 13 sampling events	No exceedances					ADEQ collected 16 samples at 4 sites in 1998 - 2002. Assessed as "attaining all uses."
Aravaipa Creek Wilderness Area - San Pedro River AZ15050203-004C A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring At Woods Ranch SPARA006.75 100212	1998 - 1 full suite 2000 - 1 full suite 2002 - 1 Turbidity (former standard)	No exceedances					
	ADEQ Ambient Monitoring 5 miles from terminus SPARA002.96 100213	1998 - 1 partial suite	No exceedances					
	Summary Row  A&Ww    Inconclusive FC        Inconclusive FBC       Inconclusive AgL       Inconclusive	1998 - 2002  4 samples 3 sampling events	No exceedances					ADEQ collected 4 samples at 2 sites in 1998 - 2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: <i>Escherichia coli</i> , dissolved oxygen, dissolved metals (cadmium, copper, and zinc), and total metals (mercury, copper, and lead).
Bass Canyon Creek tributary at 32 26 06 / 110 13 18 - Hot Springs Canyon Creek AZ15050203-899B A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring At stream length 9.2 miles SPBAS001.54 100214	1998 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Above Double R Canyon SPBAS000.75 100215	1999 - 1 full suite 2000 - 3 full suites	No exceedances					
	ADEQ Ambient Monitoring Above Hot Springs Canyon SPBAS000.24 100217	1998 - 1 partial suite	No exceedances					

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	<b>Summary Row</b> A&Ww    Attaining FC        Attaining FBC       Attaining AgL       Attaining	1998 - 2000  6 samples 4 sampling events	No exceedances					ADEQ collected 6 samples at 3 sites in 1998 - 2000. Assessed as "attaining all uses."
Bass Canyon, unnamed tributary of headwaters - Bass Canyon Creek AZ15050203-935 A&Ww, FBC, FC (tributary rule)	ADEQ Ambient Monitoring East of Bass Canyon Creek SPUBS000.20 100224	1998 - 1 suite	No exceedances					
	<b>Summary Row</b> A&Ww    Inconclusive FC        Inconclusive FBC       Inconclusive	1998  1 sampling event	No exceedances					Insufficient monitoring data to assess.
Brewery Gulch Wildcat Canyon - Mule Gulch AZ15080301-337 A&We, PBC	ADEQ TMDL Program Above mineralized zone RMBRG000.90	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We acute)	26	1 of 1		
	ADEQ TMDL Program At Mule Gulch RMBRG000.01	2000 - 4 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We - acute)	60 - 150	4 of 4		
			pH SU	6.5 - 9.0 (A&We, PBC)	6 - 7.5	1 of 4		
	<b>Summary Row</b> A&We    Impaired PBC       Inconclusive	2000  5 samples 4 sampling events	Copper (dissolved) µg/l	varies by hardness (A&We)	26 - 150	5 of 5 samples 4 of 4 events (occurred in 2000)	Impaired	Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.
			pH SU	6.5 - 9.0 (A&We, PBC)	6 - 7.5	1 of 5	Inconclusive	
Buehman Canyon headwaters - end Unique Water AZ15050203-010A A&Ww, FC, FBC, AgL Unique Water	ADEQ Ambient Monitoring 2 miles below Bullock Cyn. SPBHC002.46 100425	1999 - 1 full suite 2000 - 2 full + 1 partial suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) A&Ww	2.4 - 8.3 (31- 89%)	2 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	ADEQ Ambient Monitoring 1/4 mile below dry wash SPBHC002.17 101175	2000 - 1 full suite 2001 - 2 full suites 2002 - 1 full suite	No exceedances					
	<b>Summary Row</b> A&Ww    Attaining FC        Attaining FBC       Attaining AgL       Attaining	1999 - 2002  8 samples 8 sampling events	No exceedances					ADEQ collected 8 samples at 2 sites in 1999 - 2002. Assessed as "attaining all uses."
C - Canyon headwaters - Mule Gulch AZ15080301-342 A&We, PBC (tributary rule)	ADEQ TMDL Program At Highway 80 RMCCN000.01	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	55	1 of 1		
	<b>Summary Row</b> A&We    Inconclusive PBC       Inconclusive	2000  1 sampling event	Copper (dissolved) µg/l	varies by hardness (A&We)	55	1 of 1 event (in 2000)	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper loadings will be addressed in the Mule Gulch TMDL.

**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Copper Creek headwaters - Prospect Cyn. AZ15050203-022A A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Above Bluebird Mine SPCOP007.09 100433	1998 - 1 partial suite 1999 - 1 full suite 2000 - 1 full + 2 partial suites	No exceedances					
	ADEQ Ambient Monitoring Below Dark Canyon SPCOP005.80 100944	1999 - 1 full suite 2000 - 3 full suites	Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 7.1	1 of 1		Lab reporting limits for two other samples were too high to use results for assessment.
	<b>Summary Row</b>  A&Ww Inconclusive FC Attaining FBC Attaining AgL Attaining	<b>1999 - 2000</b>  9 samples 5 sampling events	Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 7.1	1 of 1 event	Inconclusive	ADEQ collected 9 samples at 2 sites from 1998 - 2000. Assessed as "attaining some uses" and placed on the Planning List due to selenium exceedance.
Double R Canyon Creek headwaters - Bass Cyn Creek AZ15050203-902 A&Ww, FC, FBC	ADEQ Ambient Monitoring SPDOU001.00 100222	1998 - 1 full suite	Dissolved oxygen mg/l	> 6.0 (90% saturation) (A&Ww)	5.7 (61%)	1 of 1		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	ADEQ Ambient Monitoring Near Terminus SPDOU000.20 100223	1998 - 1 full suite 2000 - 1 full suite	Dissolved oxygen mg/l	> 6.0 (90% saturation) (A&Ww)	4.7 - 6.2 (59 - 70%)	1 of 2		
	<b>Summary Row</b>  A&Ww Attaining FC Attaining FBC Inconclusive	<b>1998 - 2000</b>  3 sampling events	No exceedances					ADEQ collected 3 samples at 2 sites from 1998 - 2000. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: <i>Escherichia coli</i> .
Dubacher Canyon headwaters - Mule Gulch AZ15080301-075 A&We, PBC (tributary rule)	ADEQ TMDL Program Below Highway 80 RMDBC000.01	2000 - 1 field + metals	Copper (dissolved) µg/l	Varies by hardness (A&We)	1,400	1 of 1		
			pH (low) SU	6.5-9.0 (A&We, PBC)	2.9	1 of 1		
	<b>Summary Row</b>  A&We Inconclusive PBC Inconclusive	<b>2000</b>  1 sampling event	Copper (dissolved) µg/l	Varies by hardness (A&We)	1,400	1 of 1 event	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.
			pH (low) SU	6.5-9.0 (A&We, PBC)	2.9	1 of 1	Inconclusive	
Grant Creek headwaters - trib at 32.38 09 / 109.56 35 AZ15050201-033A A&Wc, FC, FBC, DWS, AgL	ADEQ Ambient Monitoring 1 mile below Post Creek WPGRA006.56 100561	1999 - 1 full suite 2000 - 1 partial suite	No exceedances					
	<b>Summary Row</b>  A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgL Inconclusive	<b>1999 - 2000</b>  2 sampling events	No exceedances					Insufficient monitoring data to assess.
Hendricks Gulch headwaters - Mule Gulch AZ15080301-335 A&We, PBC (tributary rule)	ADEQ TMDL Program At Mule Gulch RMHNG000.01	2000 - 3 field + metals	Copper (dissolved) µg/l	Varies by hardness (A&We)	15 - 76	1 of 3		
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	5.8 - 7.4	1 of 2		

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row	2000	Copper (dissolved) µg/l	varies by hardness (A&We)	15 - 76	1 of 3 events	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.
	A&We Inconclusive PBC Inconclusive	3 sampling events	pH (low) SU	6.5 - 9.0 (A&We, PBC)	5.8 - 7.4	1 of 2	Inconclusive	
Hot Springs Canyon Creek headwaters - San Pedro River AZ15050203-013 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Below Bass Canyon Creek SPHSC006.22 100219	1998 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Below Wildcat Canyon SPHSC006.13 100574	1999 - 1 full suite 2000 - 2 full + 2 partial suites	No exceedances					
	ADEQ Ambient Monitoring Southwest of Wildcat Peak SPHSC006.04 100220	1998 - 1 partial suite	No exceedances					
	Summary Row A&Ww Attaining FC Attaining FBC Attaining AgL Attaining	1998 - 2000 7 samples 6 sampling events	No exceedances					ADEQ collected 7 samples at 3 sites in 1998-2000. Assessed as "attaining all uses."
Leslie Canyon Creek headwaters - Whitewater Draw 15080301-007 A&Ww, FBC, FC, AgL	USGS Ambient Monitoring At Leslie Canyon National Wildlife Refuge RMLES007.02 101500	2002 - 1 partial suite	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	4.5 (52%)	1 of 1		
	Summary Row A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive	2002 1 sampling event	No exceedances					Insufficient monitoring data to assess.
Miller Canyon Creek headwaters - Broken Arrow Ranch Road AZ15050202-409A A&Wc, FC, FBC, DWS, AgL	ADEQ Biocriteria Program Near headwaters SPMLC008.64 100592	1998 - 1 suite	No exceedances					
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgL Inconclusive	1998 1 sampling event	No exceedances					Insufficient monitoring data to assess.
Morales Creek headwaters - Mule Gulch AZ15080301-331 A&We, PBC (tributary rule)	ADEQ TMDL Program Near Mule Gulch RMMOR000.40	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	18	1 of 1		
	Summary Row A&We Inconclusive PBC Inconclusive	2000 1 sampling event	Copper (dissolved) µg/l	varies by hardness (A&We)	18	1 of 1 event	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Mule Gulch headwaters - above Lavender Pit AZ15080301-090A A&Ww, FC, PBC	ADEQ TMDL Program Below Spring Canyon RMMLG008.16	2002 - 1 field + metals	No exceedances					
	ADEQ TMDL Program At Castle Rock (MG-2) RMMLG007.88 100506	1998 - 4 pH, copper, zinc	No exceedances					
	ADEQ TMDL Program At Castle Rock RMMLG007.86	2000 - 1 field + 2 metals	No exceedances					
	ADEQ TMDL Program Above Lavender Pit RMMLG007.62 (Mule Gulch 100)	1999 - 1 field + metals 2000 - 5 field + metals 2002 - 4 field + metals	Copper (dissolved) µg/l	varies by hardness (A&Ww - acute)	10 - 160	7 of 10		
			Copper (dissolved) µg/l	varies by hardness (A&Ww - chronic)	10 - 160	8 of 10		
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	5.8 - 8.7	1 of 5		
	<b>Summary Row</b>  A&Ww Impaired FC Inconclusive PBC Inconclusive	1998 - 2000  15 sampling events	Copper (dissolved) µg/l	varies by hardness (A&Ww - acute)	10 - 160	7 of 15 events	Impaired	ADEQ collected 15 samples at 4 sites in 1998-2000. Assessed as "impaired" due to copper exceedances.
			Copper (dissolved) µg/l	varies by hardness (A&Ww - chronic)	10 - 160	8 of 15 events	Impaired	Placed on the Planning List due to missing core parameters: <i>Escherichia coli</i> , dissolved oxygen, turbidity/SSC, and total mercury.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	5.8 - 8.7	1 of 10 events	Attaining	
	Mule Gulch above Lavender Pit - Bisbee WWTP AZ15080301-090B A&We, PBC	1999 - 1 pH + metals	Copper (dissolved) up/l	Varies by hardness (A&We)	4,200	1 of 1		
				1300 (PBC total)	4,200	1 of 1		Dissolved copper data were compared to the total copper standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3.1	1 of 1		
		2000 - 2 pH + metals	Copper (dissolved) up/l	Varies by hardness (A&We)	420 - 4,000	4 of 4		
				1300 (PBC total)	420 - 4,000	3 of 4		Dissolved copper data were compared to the total copper standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3 - 5.9	1 of 2		
		1998 - 3 pH + metals	Copper (dissolved) µg/l	Varies by hardness (A&We)	1762-10,050	3 of 3		
				1300 (PBC total)	2356 - 10050	3 of 3		Dissolved copper data were compared to the total copper standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3.4 - 5.8	3 of 3		
			Zinc (dissolved) µg/l	Varies by hardness (A&We)	2,040-3,760	2 of 3		

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	
	ADEQ TMDL Program Above C-Canyon RMMLG006.99	1999 - 1 pH + metals	Copper (dissolved) µg/L	Varies by hardness (A&We)	12,000	1 of 1		
				1300 (PBC - total)	12,000	1 of 1		Dissolved copper data were compared to the total copper standards.
			Lead (dissolved) µg/L	15 (PBC- total)	35	1 of 1		Dissolved lead data were compared to the total lead standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3.2	1 of 1		
	Summary Row  A&We      Impaired PBC        Impaired	1998 - 2002  17 samples 10 sampling events	Copper (dissolved) µg/L	varies by hardness (A&We)	11 - 40,000	8 of 8 events (in 1998-2002)	Impaired	ADEQ collected 7 samples at 4 sites in 1998-2002. Assessed as "impaired" due to copper and pH exceedances.
				1300 (PBC - total)	11 - 4,000	7 of 8	Inconclusive	*EPA placed pH on the list based on 7 exceedances in 15 samples. Arizona's Impaired Water Identification Rule requires at least 20 samples to base a listing decision for pH; however, once listed a parameter cannot be delisted until a TMDL is complete or data indicate designated uses are being "attained".
			Lead (dissolved) µg/L	15 (PBC- total)	35	1 of 2	Inconclusive	Zinc is now supporting uses based on 0 exceedances in 4 sampling events in the last 3 years of sampling.
			pH (low) SU	6.5 - 9.0 (A&We, PBC, AgL)	3.2	7 of 7	Inconclusive (Impaired*)	A TMDL for metals and low pH is currently being prepared for Mule Gulch and contributing tributaries.
			Zinc (dissolved) µg/l	Varies by hardness (A&We)	2,040 - 3,760	2 of 8 events (Did not exceed last 3 years)	Attaining	Also placed on the Planning List due to dissolved lead exceedance.
Mule Gulch Bisbee WWTP - Highway 80 bridge AZ15080301-090C A&Wedw, PBC	ADEQ TMDL Program Below WWTP (Site 4) RMMLG006.38 100508	1998 - 4 pH + metals	Copper (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<15 - 30	2 of 4		
				varies by hardness (A&Wedw acute)	<15 - 30	1 of 4		
	ADEQ TMDL Program At MG-200 (new site) RMMLG006.24	2000 - 3 field + metals 2002 - 2 field + metals	Copper (dissolved) up/l	Varies by hardness (A&Wedw chronic)	<10 - 9400	5 of 5		
				Varies by hardness (A&Wedw acute)	<10 - 9400	5 of 5		
				1300 (PBC - total)	55 - 9400	2 of 4		Dissolved copper data were compared to the total copper standard.
			Cadmium (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<1 - 18	3 of 4		
			Lead (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<5 - 71	1 of 3		
				15 (PBC - total)	<5 - 71	1 of 3		Dissolved lead data were compared to the total lead standard.



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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			pH SU	6.5 - 9.0 (A&Wedw, PBC)	3.1 - 8.2	2 of 4		
			Zinc (dissolved) µg/l	varies by hardness (A&Wedw)	110 - 4,300	3 of 5		
	ADEQ TMDL Program At MG-200 (old site) RMMLG006.09	1999 - 1 field + metals 2000 - 2 field + metals	Cadmium (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<1 - 16	3 of 3		
				varies by hardness (A&Wedw acute)	<1 - 16	1 of 3		
			Copper (dissolved) µp/l	varies by hardness (A&Wedw chronic)	10 - 7,300	3 of 3		
				varies by hardness (A&Wedw acute)	10 - 7,300	3 of 3		
				1300 (PBC)	<10 - 7300	1 of 3		Dissolved copper data were compared to the total copper standard.
			pH (low) SU	6.5 - 9.0 (A&Wedw, PBC)	4.2 - 8.1	1 of 2		
			Zinc (dissolved) µg/l	Varies by hardness (A&Wedw)	50 - 1,100	2 of 3		
	ADEQ TMDL Program Site MG6 RMMLG006.03 100509	1998 - 3 field + metals	Copper (dissolved) µg/l	Varies by hardness (A&Wedw acute)	43-85	3 of 3		
				varies by hardness (A&Wedw chronic)	43 - 85	3 of 3		
	ADEQ TMDL Program At MG-300 (MG-1) At 1 <sup>st</sup> Elfrida cutoff RMMLG004.65	1998 - 2 field + metals 1999 - 1 field + metals 2000 - 4 field + metals 2002 - 1 field + metals	Copper (dissolved) up/l	varies by hardness (A&Wedw chronic)	44 - 12,000	7 of 8		Dissolved copper data were compared to the total copper standards.
				varies by hardness (A&Wedw acute)	44 - 12,000	6 of 8		
				1300 (PBC - total)	44 - 12,000	2 of 8		
			Cadmium (dissolved) µg/L	varies by hardness (A&Wedw chronic)	1.2 - 34	5 of 7		
				varies by hardness (A&Wedw acute)	1.2 - 34	3 of 7		
			Lead (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<5 - 59	2 of 4		Dissolved lead data were compared to the total lead standard.
				15 (PBC - total)	<5 - 59	2 of 4		
			Zinc (dissolved) µg/l	Varies by hardness (A&Wedw)	<50 - 2,200	3 of 9		
			pH (low) SU	6.5-9.0 (A&Wedw, PBC)	3.16 - 8.58	2 of 10		

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row  A&Wedw Impaired PBC Impaired	1998-2002  24 samples 12 sampling events	Copper (dissolved) µg/l	varies by hardness (A&Wedw acute)	<10 - 9400	12 of 12 events (in 1998-2002)	Impaired	ADEQ collected 24 samples at 6 sites in 1998 - 2002. Assessed as "impaired" due to copper, cadmium, and zinc exceedances and low pH. A TMDL for metals and low pH is currently being prepared for Mule Gulch and contributing tributaries.  Also placed on the Planning List due to lead exceedance and missing core parameters: dissolved oxygen, <i>Escherichia coli</i> , and turbidity/SSC.
				varies by hardness (A&Wedw chronic)	<10 - 9400	12 of 12 events	Impaired	
				1300 (PBC - total)	55 - 9400	6 of 21	Impaired	
			Cadmium (dissolved) µg/L	varies by hardness (A&Wedw acute)	<1 - 18	3 of 8 events (in 1998-2000)	Impaired	
				varies by hardness (A&Wedw chronic)	<1 - 18	6 of 8 events	Impaired	
			Lead (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<5 - 71	1 of 6 events	Inconclusive	
				15 (PBC - total)	<5 - 71	1 of 5	Inconclusive	
			pH SU	6.5 - 9.0 (A&Wedw, PBC)	3.1 - 8.2	5 of 23	Impaired	
			Zinc (dissolved) µg/l	varies by hardness (A&Wedw acute )	110 - 4,300	5 of 12 events (in 1998 - 2002)	Impaired	
				varies by hardness (A&Wedw chronic)	110 - 4,300	5 of 12 events	Impaired	
Mule Gulch Highway 80 bridge - Whitewater Draw AZ15080301-090D A&We, PBC, AgL	ADEQ TMDL Program At 2 <sup>nd</sup> Elfrida cutoff RMMLG003.40	1998 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness A&We acute	5,500	1 of 1		Dissolved copper data were compared to the total copper standards.
				1300 (PBC - total)	5,500	1 of 1		
				500 (AgL)	5,500	1 of 1		
	Summary Row  A&We Inconclusive PBC Inconclusive AgL Inconclusive	1998  1 sample	Copper (dissolved) µg/l	varies by hardness A&We acute	5,500	1 of 1 event	Inconclusive	ADEQ collected 1 sample in 2000. Reach assessed as "inconclusive" and placed on the Planning List due to copper exceedances and insufficient monitoring.
				500 (AgL)	5,500	1 of 1	Inconclusive	
				1300 (PBC - total)	5,500	1 of 1	Inconclusive	
Mural and Grassy Hill Tributary headwaters - Mule Gulch AZ15080301-334 A&We, PBC (tributary rule)	ADEQ TMDL Program At Mule Gulch RMMHC000.01	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	15	1 of 1		
	Summary Row  A&We Inconclusive PBC Inconclusive	2000  1 sampling event	Copper (dissolved) µg/l	varies by hardness (A&We)	15	1 of 1 event (in 2000)	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper loadings will be addressed in the Mule Gulch TMDL.

**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
OK and Youngblood tributaries headwaters - Brewery Gulch AZ15050202-999 A&We, PBC (tributary rule)	ADEQ TMDL Program On "B" Hill	2000 - 1 field + metals	Copper (dissolved) µg/L	varies by hardness (A&We)	180	1 of 1		
	<b>Summary Row</b> A&We Inconclusive PBC Inconclusive	<b>2000</b> 1 sampling event	Copper (dissolved) µg/L	varies by hardness (A&We)	180	1 of 1 event (in 2000)	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper loadings will be addressed in the Mule Gulch TMDL.
Ramsey Canyon Creek headwaters - Forest Road 110 AZ15050202-404A A&Wc, FC, FBC, Agl, AgL	ADEQ Ambient Monitoring Above Nature Conservancy SPRMC007.43 100625	1998 - 1 partial suite 2000 - 1 full suite 2001 - 1 full suite	No exceedances					
	ADEQ Ambient Monitoring At Box Canyon SPRMC007.18 101060	2000 - 1 full + 1 partial suites	No exceedances					
	<b>Summary Row</b> A&Wc Inconclusive FC Attaining FBC Attaining Agl Attaining AgL Attaining	<b>1998 - 2001</b> 5 samples 5 sampling events	No exceedances					ADEQ collected 5 samples at 2 sites in 1998 - 2001. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: dissolved zinc.
Rucker Canyon Creek headwaters - Whitewater Draw AZ15080301-288 A&Wc, FC, FBC, AgL	ADEQ Ambient Monitoring Above upper-most campsite RMRUC005.63 100938	1999 - 1 full suite 2000 - 3 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.4 - 7.9 (77 - 95% )	1 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	<b>Summary Row</b> A&Wc Attaining FC Attaining FBC Attaining AgL Attaining	<b>1999 - 2000</b> 4 sampling events	No exceedances					ADEQ collected 4 samples in 1999-2000. Assessed as "attaining all uses."
San Pedro River Mexico border - Charleston AZ15050202-008 A&Ww, FC, FBC, Agl, AgL	USGS Ambient Monitoring At Palominas (transect site) 100485	2001 - 1 pH, fluoride	No exceedances					
	ADEQ & USGS Fixed Station Near Palominas SPSPR113.55 100275	1998 - 3 full suites 1999 - 2 full + 1 partial suites 2000 - 3 full suites + 7 partial suites 2001 - 4 full suites + 14 partial suites 2002 - 1 full suites + 9 partial suites	Arsenic (total) µg/L	50 (FBC)	<10 - 86	1 of 16		
			Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 23	2 of 16		
				varies by hardness (A&Ww acute)	<10 - 23	1 of 16		
			Copper (total) µg/L	500 (AgL)	<10 - 1200	1 of 16		
			Dissolved oxygen mg/l	> 6.0 (90% saturation) (A&Ww)	4.1 - 9.5 (50 - 94% )	2 of 16		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Escherichia coli CFU	235 (FBC)	0 - 493	1 of 16		

**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					COMMENTS
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	
			Lead (total) µg/L	15 (FBC)	<5 - 230	1 of 16		
				100 (AgL)	<5 - 230	1 of 16		
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 5	1 of 1		Lab reporting limits for 15 other selenium samples were too high to use results for assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	1 - >1000	2 of 16		
	USGS & ADEQ Fixed Station #09471000 At Charleston SPSPR096.49 100291	1998 - 12 partial suites 1999 - 8 partial suites 2000 - 10 partial suites 2001 - 11 partial suites 2002 - 9 partial suites	Dissolved oxygen mg/l	> 6.0 (A&Ww)	5.6 - 9.9	3 of 50		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	<b>Summary Row</b>  A&Ww    Impaired FC        Attaining FBC       Attaining AgL       Attaining AgL       Attaining	<b>1998 - 2002</b>  95 samples 51 sampling events	Arsenic (total) µg/L	50 (FBC)	<10 - 86	1 of 16	Attaining	USGS and ADEQ collected 95 samples at 3 sites in 1998 - 2002. Assessed as "impaired" due to copper exceedances.  Also placed on the Planning List due to one selenium exceedance.
			Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 23	2 of 16 events	Impaired	
				varies by hardness (A&Ww acute)	<10 - 23	1 of 16 events (in 2001)	Inconclusive	
			Copper (total) µg/L	500 (AgL)	<10 - 1200	1 of 16	Attaining	
			<i>Escherichia coli</i> CFU	235 (FBC)	0 - 493	1 of 16 events (in 1999)	Attaining	
			Lead (total) µg/L	15 (FBC)	<5 - 230	1 of 16	Attaining	
				100 (AgL)	<5 - 230	1 of 16	Attaining	
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 5	1 of 1 event	Inconclusive	
			Turbidity (former standard) NTU	50 (A&Ww)	1 - >1000	2 of 16	Attaining	
San Pedro River Charleston - Walnut Gulch AZ15050202-006 A&Ww, FC, FBC, Agl, AgL	ADEQ Ambient Monitoring Below Graveyard Gulch SPSPR095.71 100653	1999 - 1 full suite 2000 - 2 full + 1 partial suite	Turbidity (former standard) NTU	50 (A&Ww)	2 - 258	1 of 4		

**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	<b>Summary Row</b>  <b>A&amp;Ww</b> Inconclusive <b>FC</b> Attaining <b>FBC</b> Attaining <b>Agl</b> Attaining <b>Agl</b> Attaining	<b>2000</b>  <b>4 sampling events</b>	Turbidity (former standard) NTU	50 (A&Ww)	1 - 258	1 of 4	Inconclusive (see comment)	ADEQ collected 4 samples in 2000. Assessed as "attaining some uses" and placed on the Planning List due to exceedance of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.
San Pedro River Babocomari - Dragoon Wash AZ15050202-003 A&Ww, FC, FBC, Agl, AgL	Hargis & Associates CERCLA Monitoring Above Apache Nitrogen (Apache Site 12) SPSPR079.20	1998 - 2 nitrate 1999 - 3 nitrate	No exceedances					Monitoring is upstream of a Superfund site with nitrate contamination problems.
	ADEQ Ambient Monitoring 0.8 miles south of Hwy 80 SPSPR077.66 100281	1999 - 1 full suite 2000 - 2 full + 1 partial suites	<i>Escherichia coli</i> CFU/100 ml	235 (FBC)	39 - 660	2 of 4		
	<b>Summary Row</b> <b>A&amp;Ww</b> Attaining <b>FC</b> Attaining <b>FBC</b> Impaired <b>Agl</b> Attaining <b>Agl</b> Attaining	<b>1998 - 2001</b>  <b>9 sampling events</b>	<i>Escherichia coli</i> CFU/100 ml	235 (FBC)	39-660	2 of 4 events (in 2000)	Impaired	ADEQ collected 4 samples and Hargis & Associates collected 5 samples at separate sites in 1998 - 2000. Assessed as "impaired" due to <i>Escherichia coli</i> exceedances.
San Pedro River Dragoon Wash - Tres Alamos AZ15050202-002 A&Ww, FC, FBC, Agl, AgL	Hargis & Associates CERCLA Monitoring At Apache Nitrogen Products (Apache Site 3) SPSPR078.69	1998 - 2 nitrate 1999 - 2 nitrate 2000 - 4 nitrate 2001 - 5 nitrate	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	1.6 - 37	4 of 13		Monitoring is downstream of a Superfund site with nitrate contamination problems.
	Hargis & Associates CERCLA Monitoring At Apache Nitrogen Products (Apache Site 4) SPSPR077.76	2001 - 1 nitrate	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	35	1 of 1		
	Hargis & Associates CERCLA Monitoring At Apache Nitrogen Products Survey from Site 12 to Site 13 SPSPR078	2001 - 80 sites (1 sample each site) nitrate samples	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	<1 - 52	28 of 80 sites exceeded		
	Hargis & Associates CERCLA Monitoring (Apache Site 13) SPSPR076.12	1998 - 3 nitrate 1999 - 2 nitrate 2000 - 4 nitrate 2001 - 5 nitrate	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	0.74 - 28	4 of 14		
	<b>Summary Row</b> <b>A&amp;Ww</b> Impaired <b>FC</b> Inconclusive <b>FBC</b> Inconclusive <b>Agl</b> Inconclusive <b>Agl</b> Inconclusive	<b>1998 - 2002</b>  <b>108 samples</b> <b>15 sampling events</b>	Nitrate (as N) mg/l	10 (A&Ww)	0.43 - 22.6	9 of 28 (excluding survey) 35 of 108 (including survey)	Impaired	Hargis and Associates collected 108 samples at 83 sites in 1998 - 2001 to monitor the effectiveness of cleanup projects at Apache Nitrogen Products. Assessed as "impaired" due to nitrate and placed on the Planning List due to missing <u>all</u> core parameters.

**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
San Pedro River Hot Springs Cr - Redfield Cyn AZ15050203-011 A&Ww, FC, FBC, Agl, AgL	ADEQ Ambient Monitoring At Cascabel SPSPR046.96 100289	1999 - 1 full suite 2000 - 4 full suites 2001 - 1 full suite 2002 - 2 full suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	5.6 - 10.1 (75 - 113%)	1 of 8		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			<i>Escherichia coli</i> CFU/100 ml	235 (FBC)	<1 - 16,000	1 of 7		Flood conditions present.
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 8		Flood conditions present.
	Summary Row  A&Ww Inconclusive FC Attaining FBC Inconclusive Agl Attaining AgL Attaining	1999 - 2002  8 samples 8 sampling events	<i>Escherichia coli</i> CFU/100 ml	235 (FBC)	<1 - 16,000	1 of 7 events (in 2000)	Inconclusive	ADEQ collected 8 samples in 1999 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to: 1. <i>Escherichia coli</i> exceedances and 2. Former turbidity standard exceedances. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 8	Inconclusive (see comment)	
San Pedro River Aravaipa Creek - Gila River AZ15050203-001 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Below Eskiminzin Wash SPSPR003.74 100726	1998 - 1 partial suite 1999 - 1 full suite 2000 - 5 full suites 2001 - 2 full suites 2002 - 1 full suite	Arsenic (total) µg/L	50 (FBC)	<10 - 63	1 of 9		
			<i>Escherichia coli</i> CFU/100 ml	235 (FBC)	2 - 2636	2 of 9		
			Lead (total) µg/L	15 (FBC)	<5 - 140	1 of 9		
			Mercury (total) µg/L	0.01 (A&Ww chronic)	<0.5 - 0.67	1 of 1		
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 11	2 of 2		
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 10		
	ADEQ Ambient Monitoring Upstream of Roach Wash SPSPR002.88 101348	2002 - 2 full + 1 turbidity	No exceedances					Lab reporting limits for 8 other mercury samples were too high to use results for assessment.  Lab reporting limits for 7 other selenium samples were too high to use results for assessment.
	Summary Row  A&Ww Impaired FC Attaining FBC Impaired AgL Attaining	1998 - 2002  13 samples 10 sampling events	Arsenic (total) µg/L	50 (FBC)	<10 - 63	1 of 11	Attaining	ADEQ collected 13 samples at 2 sites in 1998 - 2000. Assessed as "impaired" due to <i>Escherichia coli</i> and selenium exceedances.  Placed on the Planning List due to mercury exceedances.
			<i>Escherichia coli</i> CFU/100 ml	235 (FBC)	2 - 2636	2 of 11 events (in 2000 and 2001)	Impaired	
			Lead (total) µg/L	15 (FBC)	<5 - 140	1 of 11	Attaining	
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.5 - 0.67	1 of 1 event	Inconclusive	



**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 11	2 of 2 events	Impaired	
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 13	Attaining	
Spring Canyon Creek headwaters - Mule Gulch AZ15080301-333 A&We, PBC (tributary rule)	ADEQ TMDL Program At confluence with Mule Gulch RMSPC000.10	2000 - 1 field + metals	No exceedances					
	<b>Summary Row</b>  A&We Inconclusive PBC Inconclusive	<b>2000</b>  1 sampling event	<b>No exceedances</b>					Samples were collected as part of the Mule Gulch copper TMDL. Any copper or pH loadings would be addressed in the Mule Gulch TMDL.
Ward Canyon Creek headwaters - Turkey Creek AZ15050201-433 A&Wc, FC, FBC, AgL	ADEQ Biocriteria Program Above Salisbury Canyon WPWRC000.31 100682	1998 - 1 partial suite	No exceedances					
	<b>Summary Row</b> A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive	<b>1998</b>  1 sampling event	<b>No exceedances</b>					Insufficient monitoring data to assess.
Whitewater Draw Gadwell Canyon - unnamed tributary 15080301-003 AZ15080301-004 A&We, PBC, AgL	ADEQ TMDL Program At Double Adobe RMWHD010.02	2000 - 1 partial suite	No exceedances					
	ADEQ TMDL Program At Kings Highway RMWHD006.60 100229	1998 - 1 field + metals	Lead (total) µg/l	15 (FBC)	116	1 of 1		
				100 (AgL)	116	1 of 1		
	<b>Summary Row</b>  A&We Inconclusive PBC Inconclusive AgL Inconclusive	<b>1998 - 2000</b>  2 sampling events	<b>Lead (total) µg/l</b>	<b>15 (FBC)</b>	<b>116</b>	<b>1 of 1</b>	<b>Inconclusive</b>	ADEQ collected 2 samples in 1998-2000. Assessed as "inconclusive" and placed on the Planning List due to: 1. Lead exceedance and 2. Insufficient monitoring events.
				<b>100 (AgL)</b>	<b>116</b>	<b>1 of 1</b>	<b>Inconclusive</b>	
Whitewater Draw unnamed tributary 15080301- 003 to unnamed tributary at 31 20 36 / 109 34 46 AZ15080301-002A A&We, PBC, AgL	ADEQ TMDL Program At Highway 80 (WD-1) RMWHD001.73 100510	1998 - 1 pH + metals	Lead (total) µg/L	15	68	1 of 1		
	<b>Summary Row</b>  A&We Inconclusive PBC Inconclusive AgL Inconclusive	<b>1998</b>  1 sampling event	<b>Lead (total) µg/l</b>	<b>15 (FBC)</b>	<b>68</b>	<b>1 of 1</b>	<b>Inconclusive</b>	Insufficient monitoring data to assess.  Placed on the Planning List due to lead exceedance.

**TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA**

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Whitewater Draw Unnamed tributary at 31 20 36 / 109 34 46 to Mexico border AZ15080301-002B A&Ww, FBC, FC AgL	ADEQ TMDL Program Site WD-1A RMWHD0.012 100512	1998 - 4 pH + metals	Lead (total) µg/L	15	84	1 of 4		
	ADEQ TMDL Program At International Border RMWHD0.011 101069	2000 - 1 arsenic, beryllium	No exceedances					
	Summary Row  A&Ww    Inconclusive FC       Inconclusive FBC       Inconclusive AgL       Attaining	1998 - 2000  5 samples 5 sampling events	Lead (total) µg/l	15 (FBC)	84	1 of 4	Inconclusive	ADEQ collected 5 samples at 2 sites in 1998-2000. Assessed as “attaining some uses” and placed on the Planning List due to: 1. Lead exceedance, and 2. Missing core parameters: <i>Escherichia coli</i> , dissolved oxygen, turbidity/SSC, dissolved cadmium, and total mercury.
Winwood Canyon headwaters-Mule Gulch AZ15080301-340 A&We, PBC (tributary rule)	ADEQ TMDL Program At Mural Hill Tributary (Above mining zone) RMWMC000.66	2000 - 1 pH + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	28	1 of 1		
	ADEQ TMDL Program Above Old Mill Site, (Below mineralized zone) RMWMC000.37	2000 - 1 pH + metals	pH (low) SU	6.5 - 9.0 (A&We, PBC)	6.1	1 of 1		
	Summary Row  A&We    Inconclusive PBC       Inconclusive	2000  2 samples 1 sampling event	Copper (dissolved) µg/l	varies by hardness (A&We)	28	1 of 2 events (occurred in 2000)	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	6.1	1 of 2	Inconclusive	
LAKE MONITORING DATA								
Riggs Flat Lake AZL15050201-1210 A&Wc, FC, FBC, Agl, AgL	ADEQ Lakes Program WPRIG-A 100074	1998 - 1 partial suite	No exceedances					
	Summary Row A&Wc    Inconclusive FC       Inconclusive FBC       Inconclusive Agl       Inconclusive Agl       Inconclusive	1998  1 sampling event	No exceedances					Insufficient monitoring data to assess.
Snow Flat Lake AZL15050201-1420 A&Wc, FBC, FC, Agl, AgL	ADEQ Lakes Program WPSNO-A 100084	1998 - 1 full suite	No exceedances					
	Summary Row A&Wc    Inconclusive FC       Inconclusive FBC       Inconclusive Agl       Inconclusive Agl       Inconclusive	1998  1 sampling event	No exceedances					Insufficient monitoring data to assess.

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA								
STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Twin Pond AZ15080302-0001 A&Ww, FC, FBC (tributary rule)	USGS Ambient Monitoring SPTWP-USGS 101581	2002 - 1 full suite	No exceedances					
	Summary Row A&Ww Inconclusive FC Inconclusive FBC Inconclusive	2002 1 sampling event	No exceedances					Insufficient monitoring data to assess.

TABLE 18. SAN PEDRO-WILLCOX PLAYA-RIO YAQUI WATERSHED – ASSESSMENT, PLANNING LIST, AND 303(d) STATUS				
SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
<b>SAN PEDRO-WILLCOX PLAYA-RIO YAQUI WATERSHED -- STREAM ASSESSMENTS</b>				
Aravaipa Creek Stowe Gulch - Wilderness Area 16 miles AZ15050203-004B Unique Water (previously listed as Aravaipa Canyon Creek)	A&Ww    Attaining FC        Attaining FBC       Attaining AgL       Attaining Category 1 -- Attaining All Uses			
Aravaipa Creek Wilderness Area - San Pedro River 13 miles AZ15050203-004C (previously listed as Aravaipa Canyon Creek)	A&Ww    Inconclusive FC        Inconclusive FBC       Inconclusive AgL       Inconclusive Category 3 -- Inconclusive	On the Planning List due to <u>missing core parameters</u> : <i>Escherichia coli</i> , dissolved oxygen, dissolved metals (cadmium, copper, and zinc), and total metals (mercury, arsenic, chromium, copper, and lead).		
Bass Canyon Creek tributary at 32 26 06 / 110 13 18 - Hot Springs Canyon Creek 12 miles AZ15050203-899B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 899A.)	A&Ww    Attaining FC        Attaining FBC       Attaining AgL       Attaining Category 1 -- Attaining All Uses			
Bass Canyon, <u>unnamed tributary of</u> headwaters - Bass Canyon Creek 1 mile AZ15050203-935	A&Ww    Inconclusive FC        Inconclusive FBC       Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Brewery Gulch Wildcat Canyon - Mule Gulch 1 mile AZ15080301-337	A&We    Impaired PBC       Inconclusive Category 5 – Impaired		Copper added to the 2004 303(d) List by EPA.  Samples collected for Mule Gulch TMDL study. Copper loadings are being addressed as part of the Mule Gulch TMDL report (5 of 5 copper samples and 1 of 5 pH results did not meet standards).	
Buehman Canyon headwaters - end of Unique Water 10 miles AZ15050203-010A Unique Water	A&Ww    Attaining FC        Attaining FBC       Attaining AgL       Attaining Category 1 -- Attaining All Uses	Remove beryllium from the Planning List, as the standard was revised in 2002. No exceedances based on the new standard.		
C - Canyon headwaters - Mule Gulch 0.5 miles AZ15080301-342	A&We    Inconclusive PBC       Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		Sample collected for Mule Gulch TMDL study. Copper and pH loadings will be addressed in the Mule Gulch TMDL report (1 of 1 samples exceeded copper standards).
Copper Creek headwaters - Prospect Canyon 7 miles AZ15050203-022A	A&Ww    Inconclusive FC        Attaining FBC       Attaining AgL       Attaining Category 2 -- Attaining Some Uses	On the Planning List due to <u>chronic selenium</u> exceedance (1 of 1 sampling event).		
Double R Canyon Creek headwaters - Bass Canyon Creek 5 miles AZ15050203-902	A&Ww    Attaining FC        Attaining FBC       Inconclusive Category 2 -- Attaining Some Uses	On the Planning List due to <u>missing core parameter</u> : <i>Escherichia coli</i> .  Remove dissolved oxygen, as site investigation revealed that the low dissolved oxygen was naturally occurring due to ground water upwelling, and not anthropogenic causes.		

**TABLE 18. SAN PEDRO-WILLCOX PLAYA-RIO YAQUI WATERSHED – ASSESSMENT, PLANNING LIST, AND 303(d) STATUS**

<b>SURFACE WATER DESCRIPTION</b>	<b>2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS</b>	<b>2004 PLANNING LIST</b>	<b>STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST</b>	<b>OTHER INFORMATION</b>
Dubacher Canyon headwaters - Mule Gulch 1 miles AZ15080301-075	A&We Inconclusive PBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		Samples collected for Mule Gulch TMDL study. Copper and pH loadings will be addressed in the Mule Gulch TMDL report (1 of 1 copper and pH samples did not meet standards).
Grant Creek headwaters - tributary at 32 38 09 / 109 56 35 13 miles AZ15050201-033A	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 2 samples).		
Hendricks Gulch headwaters - Mule Gulch 0.5 miles AZ15080301-335	A&We Inconclusive PBC Inconclusive Category 3 -- Inconclusive			Samples collected for Mule Gulch TMDL study. Copper and pH loadings will be addressed in the Mule Gulch TMDL report (1 of 3 copper and 1 of 2 pH samples did not meet standards).
Hot Springs Canyon Creek headwaters - San Pedro River 26 miles AZ15050203-013	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 -- Attaining All Uses			
Leslie Canyon Creek headwaters - Whitewater Draw 25 miles AZ15080301-007	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Miller Canyon Creek headwaters - Broken Arrow Ranch Road 4 miles AZ15050202-409A	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Morales Creek headwaters - Mule Gulch 2 miles AZ15080301-331	A&We Inconclusive PBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		Samples collected for Mule Gulch TMDL study. Copper loadings will be addressed in the Mule Gulch TMDL report (1 of 1 copper sample exceeded standards).
Mule Gulch headwaters - above Lavender Pit 4 miles AZ15080301-090A (Reach previously known as 090A, now split into 090A and 090B. Designated uses were also modified.)	A&Ww Impaired PBC Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to <u>missing core parameters</u> : <i>Escherichia coli</i> , dissolved oxygen, turbidity/SSC, and total mercury.  <u>Remove lead</u> from the Planning List (exceedance occurred in the segment below before reach was split).	On the 303(d) List (since 1990) for <u>copper</u> . (Acute standard exceeded in 7 of 15 samples, and chronic standard exceeded in 8 of 15 samples.) ADEQ is currently working on a TMDL and site specific standards for this reach.  <u>Delist pH and zinc</u> from the 303(d) List (no zinc exceedances in 15 samples and only 1 low pH in 10 samples).	

**TABLE 18. SAN PEDRO-WILLCOX PLAYA-RIO YAQUI WATERSHED – ASSESSMENT, PLANNING LIST, AND 303(d) STATUS**

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Mule Gulch above Lavender Pit - Bisbee WWTP 1 mile AZ15080301-090B (Reach previously known as 090A, now split into 090A and 090B. Designated uses were also modified.)	A&We Impaired PBC Impaired Category 5 – Impaired	On the Planning List due to <u>dissolved lead</u> exceedance (1 of 2 samples).	On the 303(d) List (since 1990) for <u>copper</u> . (Acute copper exceedances in 8 of 8 sampling events and total copper exceedances in 7 of 8 samples).  EPA placed <u>pH</u> on the list based on 7 of 15 exceedances, although Arizona's Impaired Water Identification Rule requires at least 20 samples to make a listing for pH. However, once listed, the reach cannot be delisted until a TMDL is complete or pH data indicate designated uses are being attained. In current data, pH exceeded standards in 7 of 7 samples.  <u>Delist zinc</u> . No exceedances in the last 3 years of sampling (0 in 4 samples).  ADEQ is currently working on a TMDL and site specific standards for this reach.	
Mule Gulch Bisbee WWTP - Highway 80 Bridge 4 miles AZ15080301-090C (Reach previously known as 090B, now 090C and 090D. Designated uses were also modified.)	A&Wedw Impaired PBC Impaired Category 5 -- Impaired	On the Planning List due to: 1. <u>Chronic lead</u> exceedance (1 of 6 sampling events) and <u>total lead</u> exceedance (1 of 5 samples). 2. <u>Missing core parameters</u> : <i>Escherichia coli</i> , turbidity/SSC, and dissolved oxygen.	On the 303(d) List (since 1990) for <u>copper</u> , <u>zinc</u> , and <u>low pH</u> . (Acute and chronic copper exceedances in 12 of 12 sampling events and total copper exceedances in 6 of 21 samples. Low pH in 5 of 23 samples. Acute and chronic zinc exceedances in 5 of 12 sampling events.)  <u>Add cadmium</u> to the 303(d) List. (Acute cadmium exceedances in 3 of 8 sampling events and chronic cadmium exceedances in 6 of 8 sampling events.)  ADEQ is currently working on a TMDL and site specific standards for this reach.	
Mule Gulch Highway 80 bridge - Whitewater Draw 5 miles AZ15080301-090D (Reach previously part of 090B, now split into 090C and 090D. Designated uses were also modified.)	A&We Inconclusive PBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. <u>Copper</u> exceedances (1 of 1 samples) and 2. Insufficient monitoring.		
Mural and Grassy Hill tributary headwaters - Mule Gulch 2 miles AZ15080301-344	A&We Inconclusive PBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		Samples collected for Mule Gulch TMDL study. <u>Copper and pH</u> loadings will be addressed in the Mule Gulch TMDL report (1 of 1 copper sample exceeded standards).
OK and Youngblood headwaters - Brewery Gulch 1 mile AZ15080301-1000	A&We Inconclusive PBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		Samples collected for Mule Gulch TMDL study. <u>Copper and pH</u> loadings will be addressed in the Mule Gulch TMDL report (1 of 1 copper sample exceeded standards.)
Ramsey Canyon Creek headwaters - Forest Rd. 110 4 miles AZ15050202-404A (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 404B.)	A&Wc Inconclusive FC Attaining FBC Attaining AgL Attaining AgL Attaining Category 2 -- Attaining Some Uses	On the Planning List due to <u>missing core parameter</u> : dissolved zinc.		
Rucker Canyon Creek headwaters - Whitewater Draw 10 miles AZ15080301-288	A&Wc Attaining FC Attaining FBC Attaining AgL Attaining Category 1 -- Attaining All Uses			



**TABLE 18. SAN PEDRO-WILLCOX PLAYA-RIO YAQUI WATERSHED – ASSESSMENT, PLANNING LIST, AND 303(d) STATUS**

<b>SURFACE WATER DESCRIPTION</b>	<b>2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS</b>	<b>2004 PLANNING LIST</b>	<b>STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST</b>	<b>OTHER INFORMATION</b>
San Pedro River Mexico border - Charleston 28 miles AZ15050202-008	A&Ww Impaired FC Attaining FBC Attaining Agl Attaining AgL Attaining Category 5 – Impaired	On the Planning List due to chronic <u>selenium</u> exceedance (1 of 1 sampling event).  Remove beryllium from the Planning List. Standard revised in 2002. No exceedances of the new standard.	Add <u>copper</u> to the 303(d) List for chronic copper exceedances (2 of 16 sampling events).	
San Pedro River Charleston - Walnut Gulch 9 miles AZ15050202-006	A&Ww Inconclusive FC Attaining FBC Attaining Agl Attaining AgL Attaining Category 2 -- Attaining Some Uses	On the Planning List due to exceedance of the former <u>turbidity</u> standard (1 of 4 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
San Pedro River Babocomari Creek - Dragoon Wash 17 miles AZ15050202-003	A&Ww Attaining FC Attaining FBC Impaired Agl Attaining AgL Attaining Category 5 -- Impaired	Remove <u>turbidity</u> from the Planning List. No exceedances in 4 samples.	Add <u>Escherichia coli</u> to the 303(d) List due to exceedances in 2 of 4 sampling events (occurred in 2000).	
San Pedro River Dragoon Wash - Tres Alamos Wash 16 miles AZ15050202-002	A&Ww Impaired FC Inconclusive FBC Inconclusive Agl Inconclusive AgL Inconclusive Category 5 -- Impaired	On the Planning List due to <u>missing all core parameters</u> . Added in 2002 due to exceedances of the former <u>fecal coliform</u> and <u>turbidity</u> standards. No current <u>Escherichia coli</u> , <u>turbidity</u> or <u>SSC</u> data. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.	On the 303(d) List (since 1990) for <u>nitrate</u> . Currently, 35 of 108 samples exceeded nitrate standards.  Nitrate sampling was conducted to determine the effectiveness of Superfund mitigation efforts. Contaminated ground water is seeping into the San Pedro near the Apache Nitrogen Products site.	
San Pedro River Hot Springs Creek - Redfield Canyon 13 miles AZ15050203-011	A&Ww Inconclusive FC Attaining FBC Inconclusive Agl Attaining AgL Attaining Category 2 -- Attaining Some Uses	On the Planning List due to: 1. <u>Escherichia coli</u> exceedance (1 of 7 sampling events, occurred in 2000). 2. Former <u>turbidity</u> standard exceedance (1 of 8 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
San Pedro River Aravaipa Creek - Gila River 15 miles AZ15050203-001	A&Ww Impaired FC Attaining FBC Impaired Agl Attaining Category 5 – Impaired	On the Planning List due to chronic <u>mercury</u> exceedance (1 of 1 sampling event).  Remove <u>turbidity</u> from the Planning List. One exceedance in 13 samples indicates support of designated uses.	Add <u>Escherichia coli</u> to the 303(d) List due to exceedances in 2 of 11 sampling events (occurred in 2000 and 2001).  Add <u>selenium</u> to the 303(d) List due to chronic selenium exceedances (2 of 2 sampling events).	
Spring Canyon Creek headwaters - Mule Gulch 1 mile AZ15080301-333	A&We Inconclusive PBC Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		Samples collected for Mule Gulch TMDL study. <u>Copper</u> or <u>pH</u> loadings will be addressed in the Mule Gulch TMDL report. (No exceedances reported in 1 sample.)
Ward Canyon Creek headwaters - Turkey Creek 3 miles AZ15050201-433	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Whitewater Draw Gadwell Canyon - unnamed tributary 15080301-003 22 miles AZ15080301-004 (Designated uses and reach delineations have changed on this stream since the last assessment.)	A&We Inconclusive PBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (only 2 samples). 2. <u>Lead</u> exceedance (1 of 1 sample).		

**TABLE 18. SAN PEDRO-WILLCOX PLAYA-RIO YAQUI WATERSHED – ASSESSMENT, PLANNING LIST, AND 303(d) STATUS**

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Whitewater Draw unnamed tributary 15080301-003 to unnamed tributary at 31 20 36 / 109 34 46 6 miles AZ15080301-002A (Designated uses and reach delineations have changed on this stream since the last assessment.)	A&We Inconclusive PBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sample). 2. Added in 2002 due to: <u>lead, zinc, manganese, beryllium, and turbidity exceedances, low dissolved oxygen and missing core parameters.</u>  Remove manganese and beryllium from the Planning List due to revised standards adopted in 2002. The old beryllium and manganese data do not exceed the new standards.  <u>Remove dissolved oxygen and turbidity</u> from the Planning List as these standards do not apply in an ephemeral water. (Change in designated uses.)		
Whitewater Draw unnamed tributary at 31 20 36 / 109 34 46 to Mexico border 0.4 miles AZ15080301-002B (This reach was split into 2 segments and designated uses have changed on this stream since the last assessment.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. <u>Lead</u> exceedance (1 of 4 samples). 2. <u>Low dissolved oxygen</u> (no current data, added to the Planning List in 2002 after being delisted from 303(d) List) 3. <u>Turbidity</u> exceedances (no current data, added to the Planning List in 2002 after being delisted from the 303(d) List). 4. <u>Missing core parameters: Escherichia coli</u> , dissolved oxygen, turbidity/SSC, dissolved cadmium, and total mercury.  Remove zinc, manganese, and beryllium from the Planning List. No exceedances in 5 samples. (New manganese and beryllium standards.)		
Winwood Canyon headwaters - Mule Gulch 2 mile AZ15080301-340	A&We Inconclusive PBC Inconclusive Category 3 -- Inconclusive	On the Planning List due to insufficient monitoring data to assess (2 samples).		Samples collected for Mule Gulch TMDL study. <u>Copper and pH</u> loadings will be addressed in the Mule Gulch TMDL report (1 of 2 copper samples exceeded standards).
<b>SAN PEDRO-WILLCOX PLAYA-RIO YAQUI WATERSHED -- LAKE ASSESSMENTS</b>				
Riggs Flat Lake 9 acres AZL15050201-1210	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive AgL Inconclusive Category 3 -- Inconclusive Trophic status -- Eutrophic	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sample). 2. Added in 2002 due to former <u>turbidity</u> standard exceedance (1 of 1 sample). Causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed.		
Snow Flat Lake 1 acre AZL15050201-1420	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive AgL Inconclusive Category 3 -- Inconclusive Trophic status -- Mesotrophic	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Twin Pond 1 acre AZ15080302-0001	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		